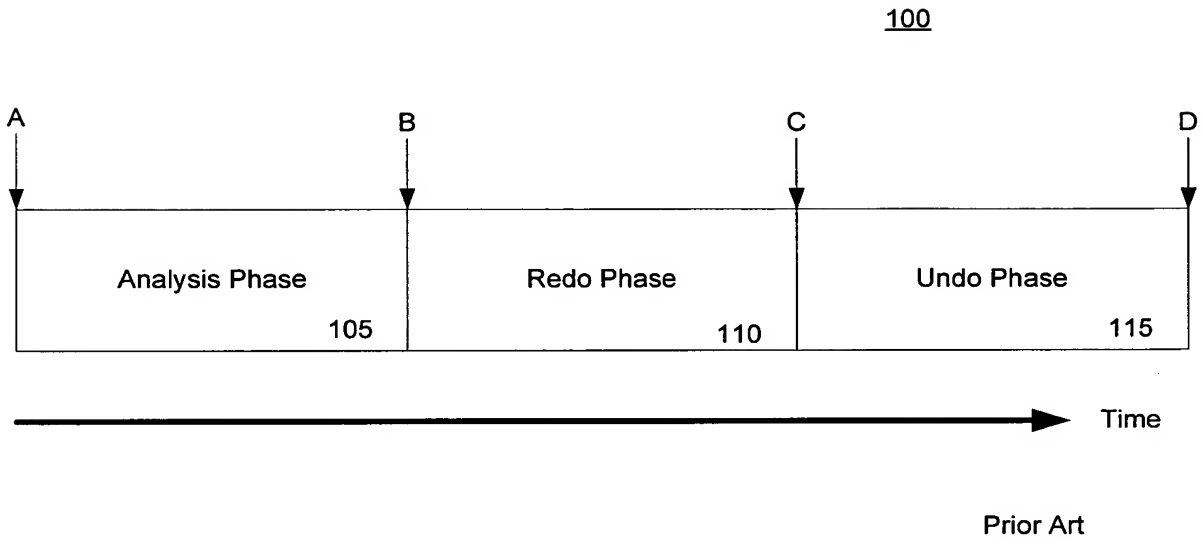


Prior Art

FIG. 1

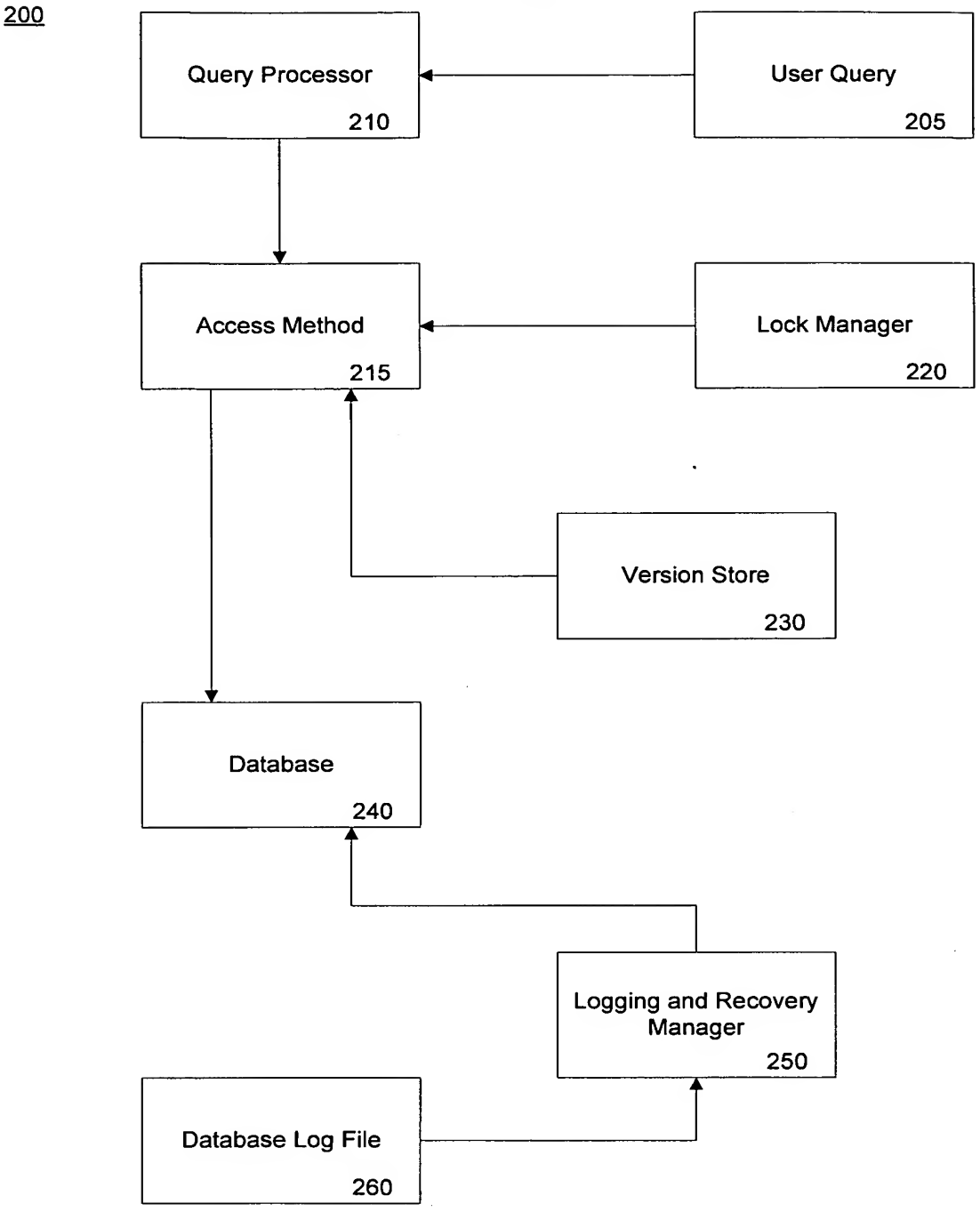

200
Query Processor
210
User Query
205
Access Method
215
Lock Manager
220
Version Store
230
Database
240
Logging and Recovery Manager
250
Database Log File
260

Fig. 2

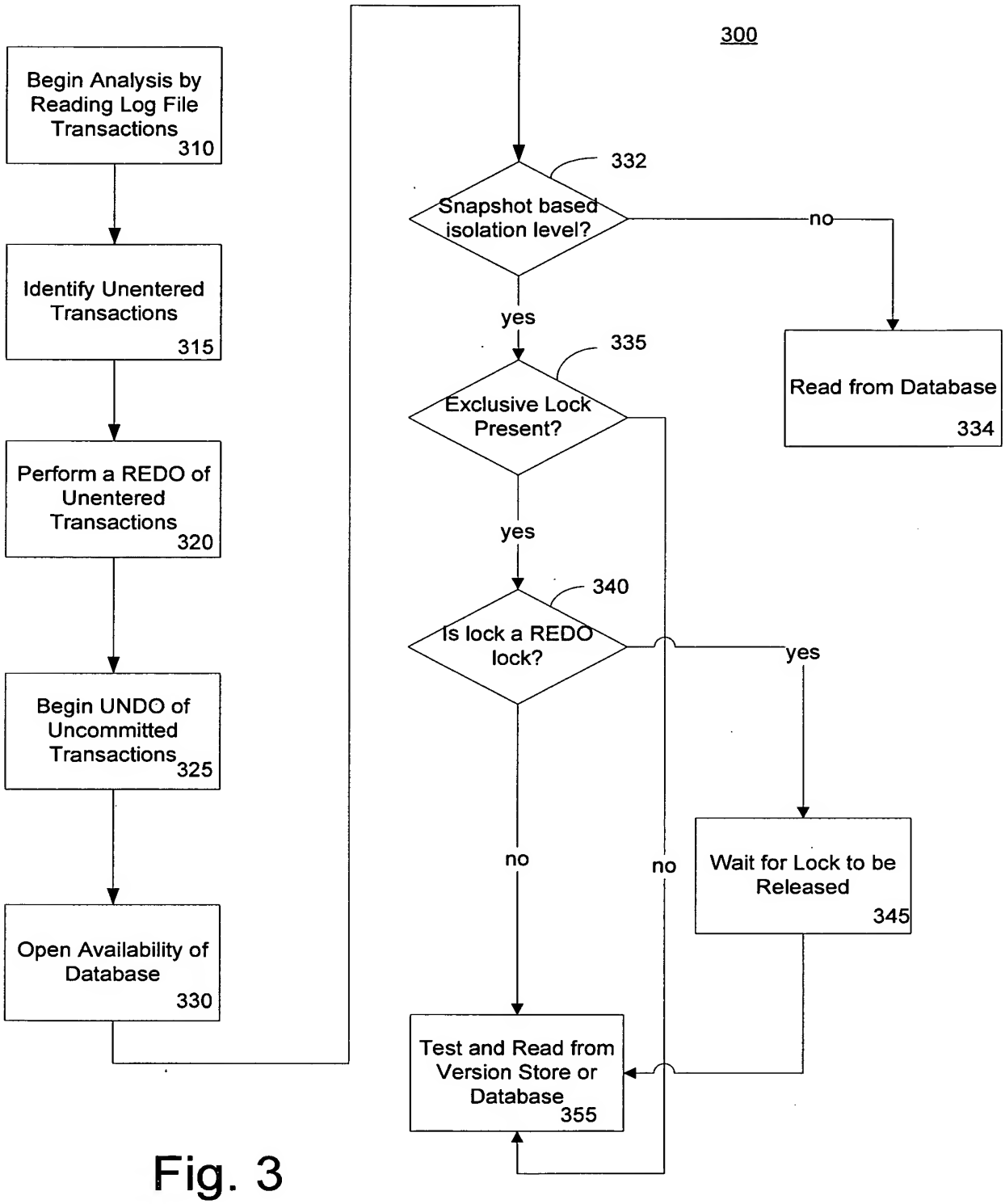

300
Begin Analysis by Reading Log File Transactions 310
Identify Unentered Transactions 315
Perform a REDO of Unentered Transactions 320
Begin UNDO of Uncommitted Transactions 325
Open Availability of Database 330
332
Snapshot based isolation level?
no
yes
335
Exclusive Lock Present?
Read from Database 334
yes
340
Is lock a REDO lock?
yes
no
no
Wait for Lock to be Released 345
Test and Read from Version Store or Database 355

Fig. 3

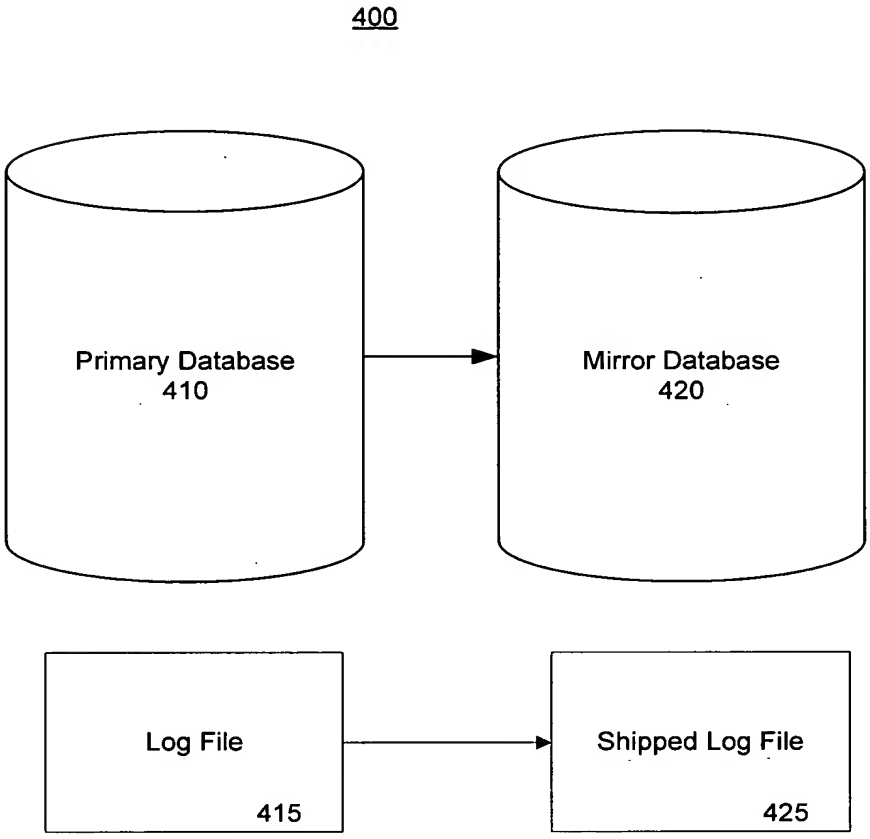

400
Primary Database
410
Mirror Database
420
Log File
415
Shipped Log File
425

FIG. 4

500

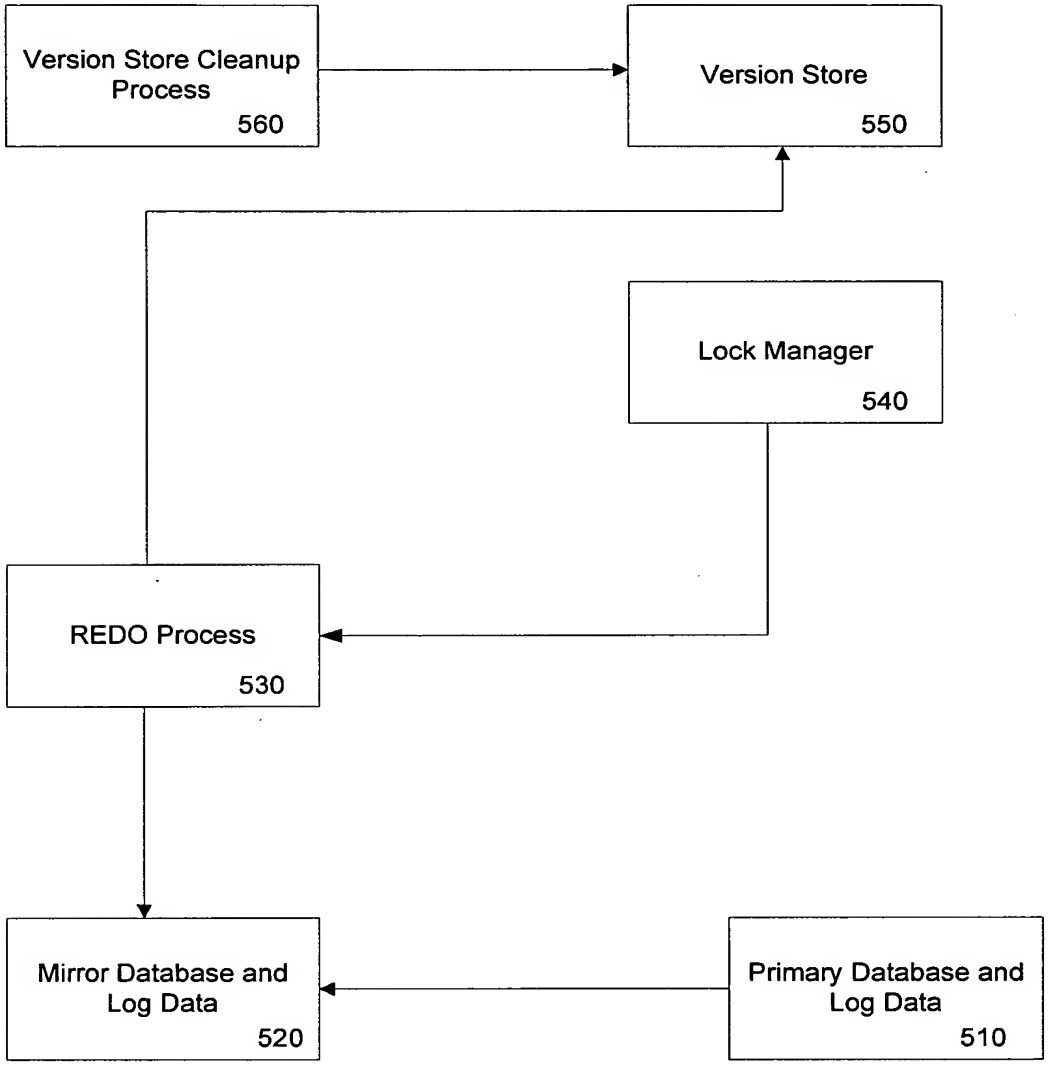

Version Store Cleanup Process
560
Version Store
550
Lock Manager
540
REDO Process
530
Mirror Database and Log Data
520
Primary Database and Log Data
510

Fig. 5

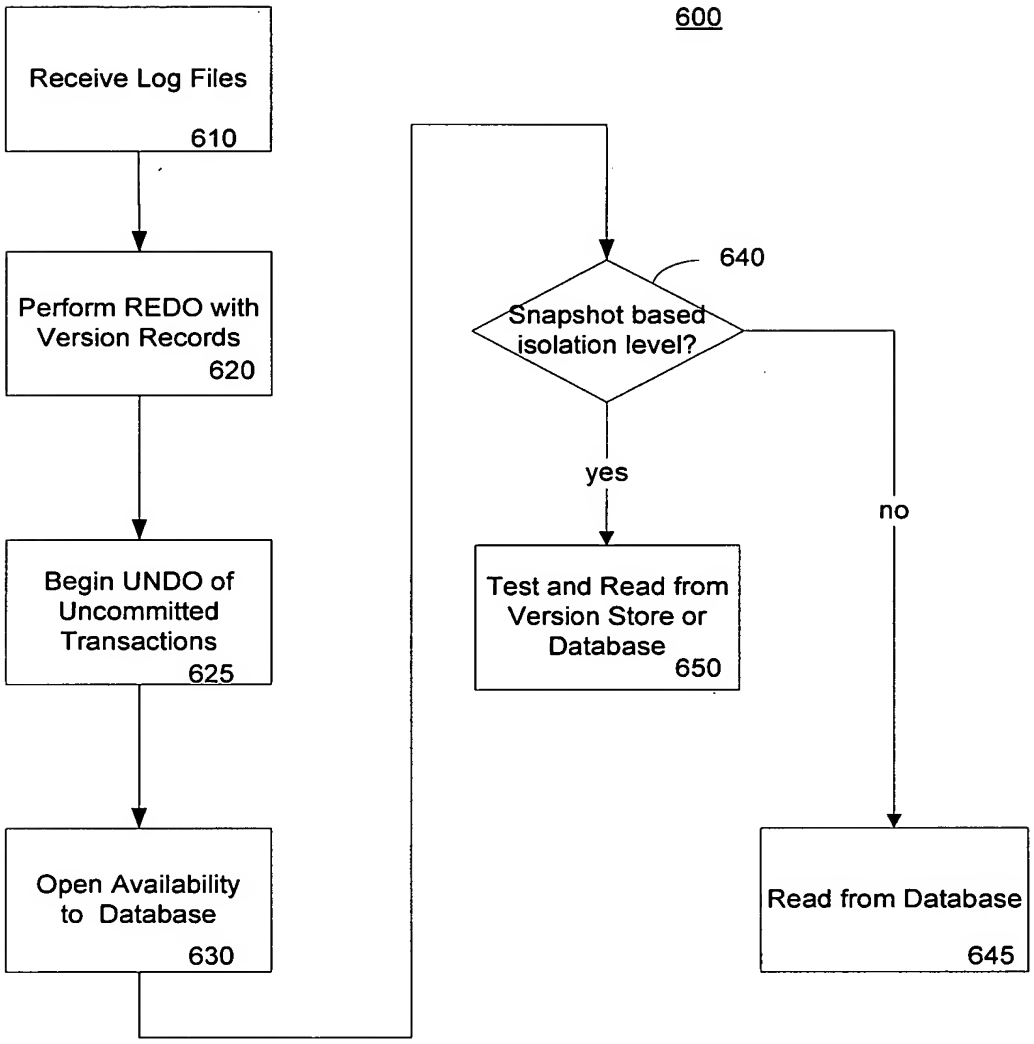
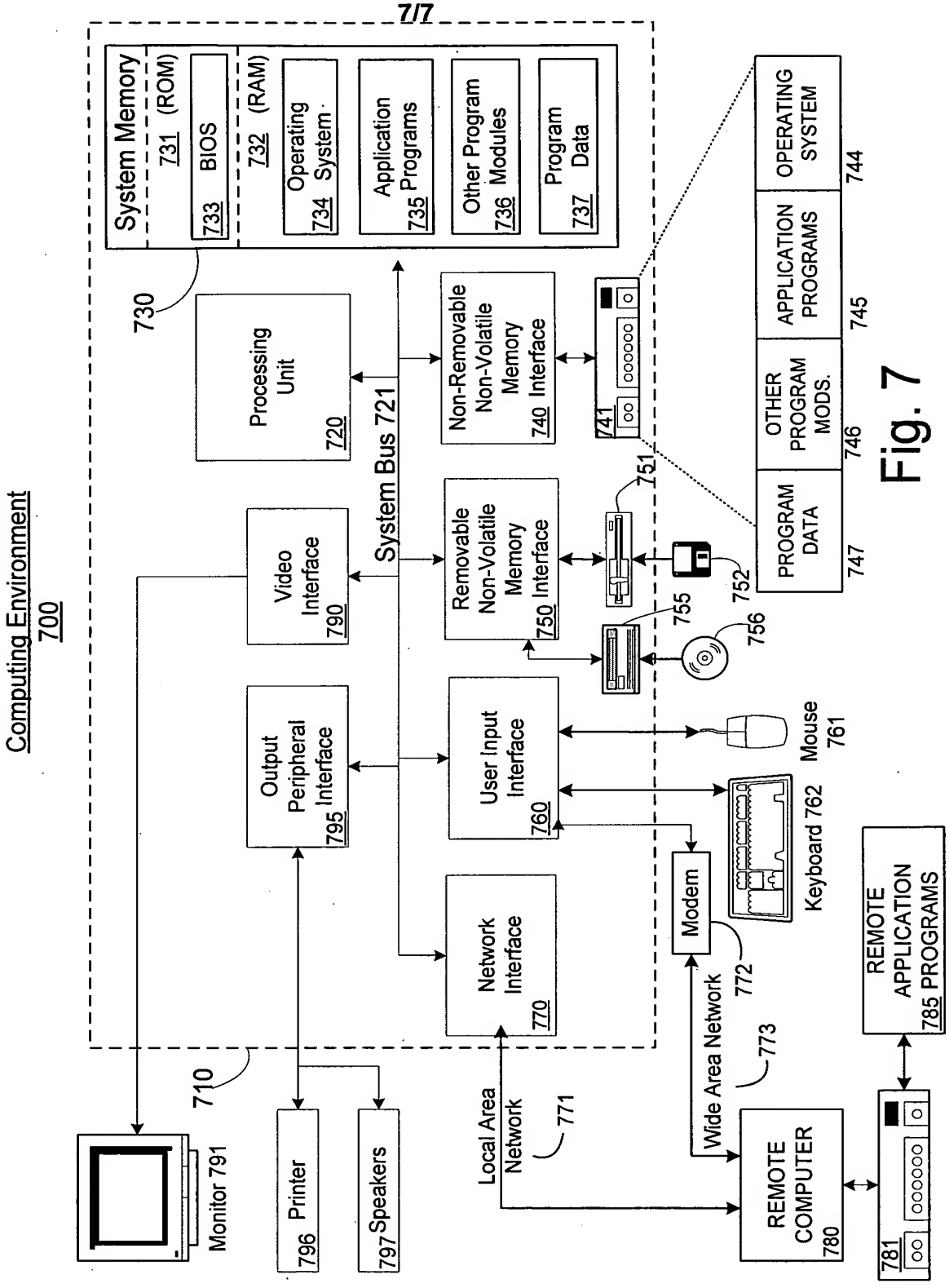

600
Receive Log Files
610
Perform REDO with Version Records
620
Begin UNDO of Uncommitted Transactions
625
Open Availability to Database
630
640
Snapshot based isolation level?
yes
no
Test and Read from Version Store or Database
650
Read from Database
645

Fig. 6


7/7
Computing Environment
700
System Memory
731 (ROM)
733 BIOS
732 (RAM)
Operating System 734
Application Programs 735
Other Program Modules 736
Program Data 737
730
Processing Unit 720
System Bus 721
Non-Removable Non-Volatile Memory Interface 740
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Removable Non-Volatile Memory Interface 750
752
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Video Interface 790
Output Peripheral Interface 795
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772
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796 Printer
797 Speakers
REMOTE COMPUTER 780
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REMOTE APPLICATION PROGRAMS 785
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APPLICATION PROGRAMS 745
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Fig. 7